UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/829,584	04/09/2001	Steven V. Kaufman	SVL920010023US1/A8692	7961

23373 7590 12/10/2007

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
BASOM, BLAINE T	

ART UNIT	PAPER NUMBER
2173	

MAIL DATE	DELIVERY MODE
12/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/829,584	KAUFFMAN ET AL.	
	Examiner	Art Unit	
	Blaine Basom	2173	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13,15-38,40-63,65-103 and 105* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13,15-38,40-63,65-103 and 105* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Regarding the 35 U.S.C. §112, first paragraph, rejection presented in the previous Office Action for claim 105, the Applicants' argue that it is well known that a "delta" – like recited in the specification – represents a difference in values. The Applicants thereby argue that the specification describes the invention in sufficient detail such that one can reasonably conclude that the inventors had possession of the features of claim 105 (i.e. "comparing the frame number and the timecode associated with the current frame of the low resolution content with a starting frame number and a starting timecode of the low resolution content"). The Examiner, however, respectfully disagrees with this argument.

The specification of the present application suggests calculating a "delta" using the frame number and timecode of a current frame and the frame number and timecode of a starting frame of low resolution content (see e.g. page 9, lines 10-22). Moreover, the Examiner agrees that a "delta" generally represents a difference in values. However, the "delta" described in the specification is not described as being between a current and starting frame of the low resolution version, nor is there any explanation in the specification as to how this "delta" is calculated (i.e. see page 9, lines 18-22: the "delta" described in the specification is merely disclosed as being a "correspondence...into the metadata files associated with the MPEG2 files"). It is therefore unclear as to whether this "delta" represents a difference between the current and starting frame of the low resolution version. The "delta" of the specification thus does not necessarily require comparing the frame number and timecode associated with a current frame of low resolution content with a starting frame number and timecode of the low resolution content, like claimed.

Accordingly, the Examiner respectfully maintains that one cannot reasonably conclude that the inventors had possession of the features of claim 105.

With respect to the 35 U.S.C. §112, first paragraph, rejection presented in the previous Office Action for claims 1, 22, 24, 26, 47, 49, 51, 72, 74, 76, 77, 78, and all claims dependent thereon, the Applicants' submit that the specification provides considerable direction and guidance (i.e. by disclosing calculating a "delta" using at least two calibration points). The Applicants thereby argue that it would not require undue experimentation to practice the claimed invention, and that consequently, the claims satisfy the enablement requirement. The Examiner, however, respectfully disagrees with the Applicants' arguments.

The specification provides little or no support with regard to determining exactly what the "delta" represents, how it is calculated, and how it is applied to identify a portion of high resolution content corresponding to a given portion of low resolution content. The specification merely discloses that, "if the system already knows the starting frame and timecode of the video, it can calculate a correspondence or 'delta', into the metadata files associated with the MPEG2 files" and that, "[t]his delta is later used to calculate an offset into the MPEG2" (see page 9, lines 18-22). Other than suggesting that the "delta" involves timecode and frame number information from two calibration points, and that it is associated with a correspondence into the metadata files associated with the MPEG2 files, the specification does not suggest that the "delta" establishes a correlation between the frame numbers and timecodes of the low resolution content, and that the delta may be applied to the starting timecode of a portion of the high resolution content to be retrieved.

Given that the specification does not explicitly define what the "delta" represents, it would require unreasonable experimentation for one of ordinary skill in the art to determine how to calculate the "delta." There is no standard calculation for such a "delta" involving frame numbers and timecodes. Moreover, the prior art provides evidence that such calculations can be unwieldy (see e.g. U.S. Patent No 7,024,097 to Sullivan, which describes calculations for determining the delta, i.e. "true time," of a given frame, the calculations involving numerous variables). By similar reasoning, it would require an unreasonable amount of experimentation for one to determine how to apply this "delta" to further establish the offset into the MPEG2 file. For these reasons, the Examiner respectfully maintains that it would require undue experimentation to practice the claimed invention, i.e. to determine how to calibrate for an offset of time between lower resolution content and higher resolution content by utilizing a frame number and a timecode associated with a current frame, as is claimed.

Regarding the pending claims, the Applicants note that Loveman describes maintaining a mapping comprising indications of high resolution video files which are equivalent to low resolution video files, whereby this equivalency can be used to associate appropriate high resolution files with given low resolution files. The Applicants assert that this mapping is used merely to identify a second compressed version (i.e. a high resolution version) corresponding to a first compressed version (i.e. a low resolution version); once the second compressed version is identified, provided time codes (i.e. a timecode range of the first compressed version) would be used, as is, to retrieve a corresponding portion of the identified second compressed version. The Applicants thereby conclude that the mapping of Loveman is unrelated to calibrating for an

offset in time between the versions like claimed. The Examiner, however, respectfully disagrees with the Applicants' argument.

In particular, the Examiner respectfully disagrees with the Applicants' assertion that the mapping mechanism taught by Loveman is used merely to identify a high resolution video file corresponding to a low resolution video file. In addition to indications of corresponding video files, Loveman discloses that the mapping mechanism also maintains indications of timecodes associating portions of the video files:

> The capture manager 714 controls the asset manager 734 so that a correspondence between the first and second compress versions is generated. In particular, the asset manager 734 initially creates and then maintains a mapping of the first and second compressed versions. In one embodiment, **the mapping is achieved by storing file identification information and timecode data** in a file. **If a filename and timecode range identifying a portion of the first compressed version is provided to the asset manager 734, the asset manager can identify a portion of the second compressed version that corresponds to the portion of the first compressed version.** In particular, **the asset manager 734 searches the file and retrieves a filename and a timecode range identifying the portion of the second compressed version** that corresponds to the portion of the first compressed version. Accordingly, correspondence between the first and second compressed versions is achieved. (See column 6, lines 32-49; emphasis added).

Loveman hereby discloses that, in response to providing an indication of a first compressed version (i.e. a low resolution video) and a timecode range of this first compressed version, the mapping mechanism is used to determine a corresponding second compressed version (i.e. a high

resolution video) and a timecode range corresponding to the provided portion of the first compressed version.

Thus, contrary to the Applicants' assertions, the timecode range of the low resolution version is not used, as is, to retrieve corresponding portions (i.e. having the same timecodes) of higher resolution content. If the time code range of the low resolution version could be used, as is, to retrieve a corresponding portion of the high resolution version, it would not be necessary to store timecode data in the file and provide to the "asset manager" a timecode range of the first compressed version; the asset manager would simply return the exact same timecode range provided to it. Since this obviously is not the case, it is respectfully submitted that that timecode range (identifying the portion of the high resolution version) returned from the asset manager is different from the time code range (identifying the portion of the low resolution version) provided to the asset manager. And since there is a difference (i.e. offset) between the timecodes of corresponding portions of high resolution content and low resolution content, it is respectfully maintained that the mapping file of Loveman is achieved by analyzing the timecodes of the lower resolution version and the higher resolution version for time synchronization, the time synchronization performed by calibrating (i.e. determining) this offset of time between the versions, like claimed.

Regarding claim 105, the Applicants submit that Jain (U.S. Patent No. 6,360,234 to Jain et al.), cited in the previous Office Action, teaches comparing the actual start time (i.e. the starting timecode) with the time T=0 (i.e. the timecode associated with the current frame), but fails to teach comparing frame numbers like claimed. In response, the Examiner respectfully submits that Sullivan teaches timecodes that include frame numbers (see e.g. column 4, line 5 –

column 5, line 54). The Examiner consequently submits that the proffered combination of Loveman, Sullivan, Clarin, and Jain teaches comparing the actual start time (i.e. the starting timecode, including frame number) with the time T=0 (i.e. the timecode, including frame number, associated with the current frame), as is claimed.

The Applicants' arguments filed October 2, 2007 have thus been fully considered, but are not persuasive.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 105 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 105 recites, "comparing the frame number and the timecode associated with the current frame of the low resolution content with a starting frame number and a starting timecode of the low resolution content. The specification of the present application provides support for identifying a frame number and timecode associated with a current frame of low resolution content, and for identifying a frame number and timecode associated with a starting frame of the low resolution

content (see page 9, line 25 – page 10, line 10). The specification suggests that these frame numbers and timecodes are utilized to calculate a "delta" into high resolution content (see page 9, line 25 – page 10, line 10). The specification, however, does not describe how this "delta" is calculated, and more specifically, does not disclose or suggest comparing the frame number and timecode associated with the current frame with the frame number and timecode associated with the starting frame, as is required by claim 105.

Independent claims 1, 22, 24, 26, 47, 49, 51, 72, 74, 76, 77, and 78, and all claims dependent thereon, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1, for example, recites "wherein the timecodes of the lower resolution content and the higher resolution content are analyzed for time synchronization of the lower resolution content with the higher resolution content, the time synchronization performed by calibrating for an offset of time between the lower resolution content and the higher resolution content by utilizing a frame number and a timecode associated with a current frame." Claims 22, 24, 26, 47, 49, 51, 72, 74, 76, 77, and 78 each include similar limitations.

The specification, i.e. at page 9, line 10 – page 10, line 10, describes a "verification process" regarding time synchronization between lower resolution content and higher resolution content. This portion of the specification discloses identifying a timecode and frame number associated with a current video frame of the lower resolution content, and identifying a frame

number a timecode of the starting frame, or of another sample frame, of the lower resolution content. The specification then discloses that these "two calibration points are used to calculate the delta," which is then "later used to calculate an offset into the MPEG2" (see page 9, lines 20-22). The specification similarly asserts, "[b]y reading one or more such timecodes and knowing their corresponding frame numbers, the system is able to calibrate itself so that it can calculate the appropriate timecodes corresponding to any frame numbers. It can then find the corresponding frame 106 in the high resolution MPEG2 file 105." (See page 10, lines 7-10).

The specification, however, fails to describe how the two points are used to calculate the delta or offset into the higher resolution files (i.e. MPEG2 files). That is, the specification fails to teach one of ordinary skill in the art how to calibrate for an offset of time between the lower resolution content and the higher resolution content by utilizing a frame number and a timecode associated with a current frame – as is required by each of claims 1, 22, 24, 26, 47, 49, 51, 72, 74, 76, 77, and 78 – without undue experimentation. As the remaining claims each depend from claim 1, 22, 24, 26, 47, 49, 51, 72, 74, 76, 77, or 78, and thereby similarly include the "calibrating for an offset" feature, the remaining claims also fail to comply with the enablement requirement.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 6-13, 15-29, 31-38, 40-54, 56-63, and 65-103 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,211,869 to Loveman et al. (hereafter "Loveman"), over U.S. Patent No. 7,024,097 to Sullivan, and also over U.S. Patent No. 6,414,725 to Clarin et al. (hereafter "Clarin"). In general, Loveman describes a "digital multimedia system," which is used by journalists and editors to create news stories that are comprised of video, text, and graphics (for example, see column 4, lines 28-39). Such a digital multimedia system is considered a "content production system" like that of the claimed invention.

Specifically regarding claims 1 and 76, the content production system of Loveman comprises:

1. an ingest system for receiving content in an initial format and for reformatting the received content into content having a first format with a lower resolution and content having a second format with a higher resolution: Loveman discloses that the above-described digital multimedia system comprises a "multimedia capture and encoding system" which receives content in an initial format and reformats the received content into a first version having a first format and into a second version having a second format, wherein the second version has

a higher resolution than the first version (see column 4, lines 28-46; column 13, lines 14-20; and column 14, lines 13-22). This multimedia capture and encoding system is consequently considered an "ingest system" like that described in the claimed invention.

2. storage for storing the lower resolution content in a fast access storage and higher resolution content in a high capacity storage, wherein the fast access storage is accessible more quickly than the high capacity storage: Loveman discloses that the two versions of the multimedia content are stored in a "multimedia storage system" (see column 4, lines 47-55). The lower resolution content is particularly stored in a "multimedia archive system" (see column 17, lines 14-22; and column 15, lines 30-59), and the higher resolution content is stored in a "media server" (see column 20, lines 19-39; and column 12, line 49 – column 13, line 14). Loveman discloses that the media server is a high-capacity server, comprising the ability to maintain the higher resolution content in near-line and off-line storage, such as on tape or optical disks (see column 12, line 49 – column 13, line 14). Additionally, Loveman discloses that the multimedia archive system, which is part of a "core newsroom system," may be accessed through a faster network than the media server, which is part of a "video production system" (for example, see column 12, lines 18-34). Because of these different network speeds, because tape storage requires a relatively large access time, and because the higher resolution content requires more bandwidth than the lower resolution content (for example, see column 7, lines 53-54), it is understood that the content

stored on the multimedia archive is accessed more quickly than the content stored on the media server. Loveman thus discloses storage for storing the lower resolution content in a fast access storage, specifically a multimedia archive, and storage for storing the higher resolution content in a high capacity storage, specifically a media server, whereby the fast access storage is accessible more quickly than the high capacity storage.

3. an edit station for selecting a portion of content from the lower resolution content: Loveman discloses that the digital multimedia system also comprises a "video editing and playback system," which is used to generate a composition using a selected portion of the content having a lower resolution (see column 4, line 56 – column 5, line 4; and column 17, lines 43-54). Such a video editing and playback system is consequently understood to comprise an "edit station" like recited in the claimed invention, wherein the edit station is used for selecting a portion of content from the lower resolution version.

4. a retrieval apparatus for receiving a description of the selected portion from the edit station and retrieving a portion of content from the higher resolution content corresponding to the selected portion: Loveman discloses that the "video editing and playback system" is used to generate a composition using a selected portion of the content having a low resolution, and retrieve and play back the composition using the corresponding portion of the content having a higher resolution (see column 4, line 56 – column 5, line 4; and column 17, lines 43-54). Such a video editing and playback system is consequently understood to comprise

a "retrieval apparatus," like recited in the claimed invention, wherein the retrieval apparatus is used for receiving from the edit station a description of the selected portion of lower resolution content and for retrieving a portion of the higher resolution content corresponding to this selected portion.

5. wherein timecodes identifying corresponding portions of the lower resolution content and higher resolution content are stored with the lower resolution and higher resolution content, respectively: Loveman suggests that timecodes are stored with each of the lower resolution and higher resolution content, the timecodes for identifying portions of the content (see e.g. column 6, lines 31-67).

6. wherein the timecodes of the lower resolution content and the higher resolution content are analyzed for time synchronization of the lower resolution content with the higher resolution content, the time synchronization performed by calibrating for an offset of time between the lower resolution content and the higher resolution content by utilizing a timecode associated with a current frame: Loveman discloses that a "mapping" is created between timecodes of the lower resolution version and the higher resolution version, such that by providing a timecode range for a portion of the lower resolution version, the corresponding portion of the higher resolution version can be identified (see e.g. column 6, lines 31-49). Creating such a mapping necessitates analyzing the timecodes of the lower resolution content and the higher resolution content. This mapping is indicative of a calibration for an offset of time between the lower resolution

content and the higher resolution content. If there was no offset, no mapping would be necessary, since the timecodes of the low resolution content could be used, as is, to retrieve corresponding portions (i.e. having the same timecodes) of higher resolution content. Since this is not the case (i.e. a mapping is necessary), there clearly exists an offset of time between the lower resolution content and the higher resolution content, and synchronization is performed (i.e. the mapping is created) by calibrating for an offset of time between the lower resolution content and the higher resolution content. This synchronization utilizes a timecode (see e.g. column 6, lines 31-49: timecodes are used in the mapping between versions).

Loveman, however, does not explicitly describe a third format of the content, the third format having a lowest resolution and being stored in the fast access storage, as is claimed.

Nevertheless, Loveman discloses that the edit station comprises a graphical user interface including a "storyboard window," by which a user generates a sequence of "clips," each clip representing a portion of the low resolution content (see figure 11, and its associated description at column 17, line 55 – column 18, line 61). These clips, each depicted as a small rectangular object showing a frame of the corresponding low resolution content, may be selected in order to play its corresponding low resolution content (see column 18, lines 11-25; column 18, lines 47-55; and figure 11). It is notoriously well-known in the art of video editing to implement such clips as thumbnails, which have size and resolution that is lower than the content that they represent. The Examiner takes OFFICIAL NOTICE of this teaching.

Accordingly, it would have been obvious to one of ordinary skill in the art, having the teachings of Loveman at the time the invention was made, to modify the storyboard window of

Loveman to implement thumbnails for each of the clips. One would have been motivated to use such thumbnails because of their widespread use and because they are standard means for representing video data, as is known in the art. To generate such thumbnails, it is understood that the above-described ingest system of Loveman additionally reformats the initial content into content having a third format with a lowest resolution, i.e. the resolution for the thumbnails, whereby this third format of the content is stored with the lower resolution content in fast access storage, so that it may be retrieved and displayed and used to access the lower resolution content at the edit station. Loveman thus teaches – to one of ordinary skill in the art – a content production system similar to that of claims 1 and 76. Loveman, however, does not explicitly disclose that the synchronization of the lower resolution content with the higher resolution content (i.e. the mapping between the lower resolution content and higher resolution content) is performed by utilizing both a frame number and a timecode associated with a current frame, as is expressed in claims 1 and 76. Moreover, while Loveman discloses that the edit station is connected to a multimedia storage system via a network to "browse" and select a portion of the lower resolution content (for example, see column 5, lines 5-62; column 7, lines 1-37; and column 17, lines 43-64), Loveman does not explicitly disclose that the edit station comprises a browser to select portions of the lower resolution content, as is expressed in claims 1 and 76.

Nevertheless, Sullivan describes timecodes that utilize frame numbers for synchronization purposes (see e.g. column 4, line 6-67; and column 14, line 32 – column 14, line 50). Such timecodes help ensure "frame accurate" synchronization (see e.g. column 4, lines 6-16).

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Loveman and Sullivan before him at the time the invention was made, to modify the timecodes taught by Loveman such that they include frame numbers like taught by Sullivan, because such timecodes help ensure frame accuracy, as is taught by Sullivan. Loveman and Sullivan thus teach synchronizing lower resolution content with higher resolution content (i.e. creating a mapping between the lower resolution content and higher resolution content) by utilizing a timecode – including a frame number – associated with a current frame (i.e. the mapping of Loveman utilizes timecodes to synchronize the two versions, and as modified by Sullivan, would also include frame numbers). Loveman and Sullivan thus teach – to one of ordinary skill in the art – a content production system similar to that of claims 1 and 76. Neither Loveman nor Sullivan, however, explicitly discloses that the edit station comprises a browser to select portions of the lower resolution content, as is required by claims 1 and 76.

Like Loveman, Clarin describes a system for receiving content in an initial format, and for reformatting the content into content having a first format and content having a second format, wherein the second format has a higher resolution than the first format (see column 2, line 60 – column 4, line 24). Clarin additionally describes an edit station for selecting and specifying a portion of the low resolution content, which like that of Loveman, is stored remotely over a network (see column 4, lines 40-64). Specifically regarding the claimed invention, Clarin teaches that such an edit station may implement a browser to select a portion of the low-resolution content (see column 4, lines 25-39).

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Loveman, Sullivan, and Clarin before him at the time the invention was made, to

modify the edit station taught by Loveman and Sullivan, such that it includes the browser of Clarin for searching and selecting portions of lower resolution content. It would have been advantageous to one of ordinary skill to utilize this combination, because such browsers are inexpensive, readily available, and provide a familiar graphical user interface, as is taught by Clarin (see column 4, lines 25-39). Accordingly, Loveman, Sullivan, and Clair teach a content production system like that of claims 1 and 76.

Concerning claims 26, 51, 77, and 78, the above-described digital multimedia system of Loveman, Sullivan, and Clarin is understood to necessitate software and teach a method for: receiving content in an initial format and reformatting the received content into content having a first format with a lower resolution, content having a second format with a higher resolution, and content having a third format with a lowest resolution; storing the lower resolution content and the lowest resolution content in a fast access storage and the higher resolution content in a high capacity storage, wherein the fast access storage is accessible more quickly than the high capacity storage; selecting a portion of content from the lower resolution content using a browser; and, receiving a description of the selected portion and retrieving a portion of content from the higher resolution content corresponding to the selected portion, wherein timecodes identifying corresponding portions of the lower resolution and higher resolution content are stored with the lower resolution and higher resolution content, respectively, and wherein the timecodes of the lower resolution content and the higher resolution content are analyzed for time synchronization of the lower resolution content with the higher resolution content, the time synchronization performed by calibrating for an offset of time between the lower resolution content and the higher resolution content by utilizing a frame number and a timecode associated

with a current frame. Such a method is considered a method like that of claims 26 and 77, which is for producing content, and such software is considered a program product, like that recited in claims 51 and 78.

Regarding claims 2-3, 27-28, and 52-53, Loveman discloses that the above-described first version of the reformatted multimedia content is a low resolution version, and that the above-described second version of the reformatted multimedia content is a high resolution version (for example, see column 4, lines 28-39). Moreover, Loveman discloses that each version comprises digitized video content (see column 14, lines 13-22; and column 13, lines 14-37). It is therefore understood that the first version comprises low-resolution digitized video content, and that the second version comprises high resolution digitized video content.

As per claims 4, 29, and 54, Loveman discloses that the above-described first version of the reformatted multimedia content may be an MPEG-1 encoded stream (see column 5, line 63 – column 6, line 19). Thus the first version is considered to comprise "MPEG1," as is expressed in each of claims 4, 29, and 54.

With respect to claims 6-7, 31-32, and 56-57, Loveman discloses that the above-described multimedia capture and encoding system is connected to a network, which is used for transmitting data (see column 5, lines 19-34; column 14, lines 13-22; and column 13, lines 14-20). This multimedia capture and encoding system, which is considered an ingest system as described above, is therefore understood to be "web-based" like recited in claims 6, 31, and 56. Moreover, Loveman discloses that the above-described video editing and playback system is connected to a network, which is used for sending and receiving data (see column 5, lines 19-34; column 5, lines 50-62; and column 16, line 64 – column 17, line 11). Therefore, this video

editing and playback system, which is understood to comprise an edit station as is described above, is considered "web-based" as recited in claim 7. Since the ingest system and edit station are both web based, the method taught by Loveman, Sullivan, and Clarin, which comprises these systems, is also considered web based as recited in claims 32 and 57.

In reference to claims 8-9, 33-34, and 58-59, Loveman discloses that the above-described first version of the multimedia content, which is of lower resolution than the second version, is stored in fast access storage during editing. Specifically, the version is stored in disk storage (for example, see column 8, lines 18-40).

In regard to claims 10, 35, and 60, Loveman discloses that the above-described second version of the multimedia content, which is of higher resolution than the first version, may be stored on tape storage (for example, see column 12, lines 49-60).

Referring to claims 11, 36, and 61, the multimedia capture and encoding system disclosed by Loveman receives content in an initial format and reformats the received content into a first version having a first format and a second version having a second format, wherein the second version has a higher resolution than the first version, as is described above. Loveman particularly discloses that this multimedia capture and encoding system comprises a "media recorder" (see column 14, lines 13-22), which receives the multimedia content in its initial format, and *digitizes* and compresses the content into the first and second versions (see column 13, lines 14-37). Since the initial format is *digitized*, or in other words, converted from an analog to a digital format, it is understood that the initial format prior to this digitization is analog.

Concerning claims 12-13, 37-38, and 62-63, Loveman discloses that metadata may be added to the stored multimedia content (see column 19, lines 21-63). It is therefore understood that the digital multimedia system of Loveman comprises an apparatus for adding metadata to the stored content. Specifically regarding claims 13, 38, and 63, Loveman discloses that such metadata may comprise "user defined elements," or in other words, user input (see column 19, lines 48-56).

In regard to claims 15-16, 40-41, and 65-66, Loveman discloses that timecodes identifying corresponding portions of the above-described first and second versions are stored with the first and second versions, respectively (see e.g. column 20, lines 19-39). The timecodes associated with the selected portion of the first version, i.e. lower resolution version, are used to retrieve the corresponding portion of the second version, i.e. higher resolution version (see column 20, lines 19-39). Moreover, Loveman presents a graphical user interface used to create compositions of the multimedia data, wherein the timecodes associated with the first version are displayed with the images of the first version (see column 18, lines 11-25; and reference number 516 in figure 11). Loveman does not explicitly disclose that the time codes are "superimposed" on the images, as is claimed. Nevertheless, it is notoriously well-known in the art to superimpose timecodes on video images. The Examiner takes OFFICIAL NOTICE of this teaching. Accordingly, it would have been obvious to one of ordinary skill in the art, having the teachings of Loveman at the time the invention was made, to superimpose timecodes on each of the low resolution video images. One would have been motivated to superimpose such timecodes because such timecodes provide useful information while viewing video, as known in the art. By superimposing such timecodes, the timecodes may be viewed using any type of

playback devices. To superimpose such timecodes, it is understood that there necessarily exists some mechanism which superimposes the timecodes over the individual frames of the lower resolution content. Such a mechanism is considered part of the ingest system of claim 1, which formats initial content into the lower resolution content.

In reference to claims 17-21, 42-46, and 67-71, the video editing and playback system of Loveman, Sullivan, and Clarin is understood to comprise an edit station, which is used to select a portion of content from the low resolution version of the multimedia content, as is described above. Loveman particularly discloses that such an edit station comprises software for searching the lower resolution content based on user specified criteria (see column 17, lines 44-64). Moreover, Loveman discloses that the edit station provides an interface for viewing the lower resolution content and selecting portions therefrom (see column 18, lines 47-55). Also provided by the user interface of the edit station is a "storyboard window," which allows users to create a sequence of selected video clips in order to produce a news story (see column 18, lines 47-55). As this storyboard window allows clips to be laid out in sequence, according to the user's desire, it is interpreted that the sequence can be modified until the user is satisfied with the sequence. Thus the edit station of Loveman is understood to further comprise software for creating a list of selected portions of the lower resolution content, whereby this list may be modified. Lastly, Loveman discloses that this list may be provided to the above-described retrieval apparatus, i.e. "video editor," which retrieves and displays clips of higher resolution content corresponding to the list (see column 18, line 56 – column 19, line 20). Thus the description sent to the retrieval apparatus comprises this list.

With respect to claims 98-103, Loveman describes a journalist workstation, part of the above-described "video editing and playback system," which is used to generate a composition using a selected portion of the content having a low resolution, and retrieve and play back the composition using the corresponding portion of the content having a higher resolution (see column 4, line 56 – column 5, line 4; and column 17, lines 43-54). This journalist workstation comprises a graphical user interface with a storyboard window, which as described above, may display a plurality of thumbnails representing portions of the low resolution content (see column 17, line 55 – column 18, line 25). As further described above, these thumbnails are considered a third version of the initial content, and are considered to exist in a third format, having a lowest resolution. Accordingly, this third format is understood to comprise thumbnail representations of the low resolution content, which like recited in claims 98-100, is used as metadata describing the low resolution content. Loveman discloses that these thumbnails may be arranged in a sequence, whereby the low resolution content corresponding to the thumbnails may be displayed to the user according to the sequence (for example, see column 18, lines 46-55). Such a sequence is considered a "storyboard" like described in claims 101-103. Consequently, the above-described combination of Loveman, Sullivan, and Clarin is considered to teach that selecting a portion of content from the lower resolution content comprises searching the lower resolution content, reviewing the content having the third format, i.e. thumbnails, as metadata of the content having the lower resolution format, and preparing a storyboard using the content having the third format.

In regard to claims 22, 47, 49, 72, and 74, Loveman, Sullivan, and Clarin present a content editing system, method, and program product wherein multimedia content is reformatted

into a plurality of versions having different resolutions, wherein lower and lowest resolution versions are stored in a fast access storage, and a higher resolution version is stored in a high capacity storage, and wherein the fast access storage is accessible more quickly than the high capacity storage, as is described above. In particular, the low-resolution version and the lowest resolution version may be stored in a first server, namely a "multimedia archive," as is described above. The low resolution content may be accessed, viewed, and selected on an edit station using a browser, as further described above. Specifically, the multimedia archive server provides the low resolution content to a content editing application implemented on a journalist workstation, whereby selected portions of the content may be viewed and edited (see column 16, line 64 – column 17, line 11; and column 17, line 44 – column 18, line 60 of Loveman). Thus the server of the multimedia archive is considered to host a content-editing application enabling access, viewing, and selection of portions of the low-resolution content. Moreover, Loveman discloses that a plurality of such journalist workstations may be in communication with the multimedia archive server (see column 14, lines 35-45), each workstation implementing the content-editing application to search, view, and select portions of the low resolution content and from the selected portions, create an edit list for use in retrieving corresponding portions of the high resolution content (see column 16, line 64 – column 17, line 11; and column 17, line 44 – column 19, line 20). Clarin complements the teachings of Loveman, and particularly teaches that such a journalist workstation may implement a browser to select portions of the low resolution content, as is described above. Thus the content editing system of Loveman, Sullivan, and Clarin comprises a plurality of clients in communication with the server, each client enabled to run the content-editing application to search, view, and select portions of the low resolution

content using a browser, and from the selected portions, create an edit list for use in retrieving corresponding portions of the high resolution content.

As per claim 24, the multimedia archive server of Loveman, Sullivan, and Clarin, which is described in the previous paragraph, is understood to necessitate software for enabling access, viewing, and selection of portions of the low resolution content and lowest resolution content from a file stored in a fast access storage accessible to the server. Moreover, each of the journalist workstations, which are described in the previous paragraph, are understood to necessitate client software for searching, viewing, and selecting portions of the low resolution content using a browser, and from the selected portions, creating an edit list, i.e. story board for use in retrieving corresponding high resolution content in a high capacity storage accessible to the server, wherein the fast access storage is accessible more quickly than the high capacity storage. This server software and client software is considered to constitute a "content editing software application," like that of claim 24.

With respect to claims 23, 25, 48, 50, 73, and 75, Loveman discloses that the above-described edit list is sharable with other journalist workstations, i.e. clients, through the multimedia archive server (see column 18, lines 47-60).

With respect to claims 79-81, Loveman describes a verification process to determine the correspondence between the above-described first version of the multimedia content, and the above-described second version of the multimedia content (for example, see column 6, lines 31-67). This verification is particularly done by a "capture manager," which is part of the above-described ingest system of Loveman (see column 5, lines 35-43, and column 6, lines 31-67). Consequently, it is understood that the above-described system of Loveman, Sullivan, and

Clarin, which comprises such a capture manager, performs the verification process described in each of claims 79-81.

Concerning claims 82-84, Clarin teaches that for an encoded multimedia data stream to be displayed to the user, the encoded data must be converted into an audio and video format (see column 4, lines 24-39). Consequently, it is understood that the playback system, i.e. retrieval apparatus described by Loveman, which is used for retrieving and displaying a portion of encoded, high-resolution multimedia content for final editing (for example, see column 4, line 56 – column 5, line 4; and column 7, lines 1-23), inherently converts the encoded content into a fourth format, specifically an audio and video format, such that the multimedia content can be viewed for final editing.

Regarding claim 85, both Loveman and Clarin disclose that a server hosting a content-editing application also enables access and viewing of the low-resolution content (for example, see column 8, line 18 – column9, line 8; and column 17, lines 43-64 of Loveman; and column 4, lines 25-39 of Clarin). Additionally, both Loveman and Clarin disclose that each of a plurality of clients is enabled to run the content-editing application to search and view the low-resolution content (for example, see column 7, lines 38-52 of Loveman; and column 4, lines 10-39 of Clarin).

With respect to claims 86-97, Loveman discloses that the multimedia archive, which as described above is considered a fast access storage, comprises a "library server" used to catalog and retrieve low resolution content (see column 15, lines 30-59). Additionally, Loveman discloses that the low resolution content may be transmitted from the server via a stream, that it may be displayed at the user's computer as it is delivered (for example, see column 9, lines 9-

35). Clarin similarly teaches streaming low resolution content from a server (see column 4, lines 24-39). Consequently, the above-described multimedia archive of Loveman, Sullivan, and Clarin is considered digital library with media streaming capability.

Claims 5, 30, and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Loveman, Sullivan, and Clarin, which is described above, and also over the "VideoUniversity.com" website (which is hereafter referred to as "VideoUniversity"). As shown above, Loveman, Sullivan, and Clarin present a system and method like that recited in claims 1, 26, and 51. Loveman particularly describes a multimedia capture and encoding system, i.e. ingest system, which receives content in an initial format and reformats the received content into a first version having a first format and a second version having a second format, wherein the second version has a higher resolution than the first version (see column 4, lines 28-46; column 13, lines 14-20; and column 14, lines 13-22). As shown above, Loveman teaches that the format of this first version may comprise MPEG1. Moreover, Loveman discloses that the format of this second version may comprise MJPEG, such that it is of television broadcast quality (see column 6, lines 3-19). Loveman therefore does not explicitly disclose that the format of the second version comprises MPEG2, as is recited in each of claims 5, 30, and 55. Similarly, Clarin and Sullivan fail to teach that the format of the second version comprises MPEG2.

Like Loveman and Clarin, VideoUniversity discusses video editing, and more specifically, presents several video-editing systems (for example, see page 1). Regarding the claimed invention, VideoUniversity discloses that, "while MJPEG is excellent for delivering fantastic video quality out to tape, it is a poor choice for multimedia" (see page 3). As described

above, the content production system taught by Loveman is used to capture and edit multimedia content. Moreover, VideoUniversity describes MPEG2 based video compression and compares it with MJPEG, stating that, "... the quality of [these] MPEG2 based cards is outstanding. MPEG2 is a much more efficient compression than MJPEG, so you can maintain video quality at ½ the data rate!!" (see the bottom of page 3).

Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Loveman, Sullivan, Clarin, and VideoUniversity before him at the time the invention was made, to modify the multimedia capture and encoding system of Loveman, Sullivan, and Clarin such that instead of reformatting the initial content into an MJPEG format, it reformats the content into an MPEG2 format, as is taught by VideoUniversity. It would have been advantageous to one of ordinary skill to utilize such a combination because MPEG2 provides similar quality to that of MJPEG at a lower data rate, as is taught by VideoUniversity.

Claim 105 is rejected under 35 U.S.C. 103(a) as being unpatentable over the above-described combination of Loveman, Sullivan, and Clarin, and also over U.S. Patent No. 6,360,234 to Jain et al. (hereafter "Jain"). As shown above, Loveman, Sullivan, and Clarin present a system like that recited in claim 1, in which a frame number and timecode associated with a current frame is utilized to determine an offset between lower resolution content and corresponding higher resolution content. Loveman, Sullivan, and Clarin, however, do not explicitly disclose that the offset between the lower resolution content and the higher resolution content is calibrated by comparing the frame number and the timecode associated with the

current frame of the lower resolution content with a starting frame number and a starting timecode of the low resolution content, as is required by claim 105.

Like Loveman, Jain describes an ingest system comprising multiple encoders for receiving content in an initial format and reformatting the content into content having a first format with a lower resolution and content having a second format with a higher resolution (see e.g. column 2, lines 16-26; and column 5, lines 8-50). Particularly regarding the claimed invention, Jain teaches calibrating an offset between the lower resolution content and the higher resolution content by comparing the timecode associated with a current frame (i.e. the frame at time "T=0," when all encoders have begun encoding) of the low resolution content with a starting timecode of the low resolution content, i.e. to determine a "delta-time" for the lower resolution content (see e.g. column 5, line 64 – column 6, line 28). This "delta-time" is applied in synchronizing the multiple versions of content (see e.g. column 5, line 64 – column 6, line 28).

It would have been obvious to one of ordinary skill in the art, having the teachings of Loveman, Sullivan, Clarin, and Jain before him at the time the invention was made, to modify the multimedia capture and encoding system of Loveman, Sullivan, and Clarin such that calibrating the offset between the lower resolution content and the higher resolution content (i.e. creating the mapping between the lower and higher resolution content) includes determining the "delta-time" for the lower resolution content by comparing the timecode associated with a current frame of the low resolution content with a starting timecode of the low resolution content, as is taught by Jain. It would have been advantageous to one of ordinary skill to utilize this combination, because such a "delta-time" accounts for discrepancies between the time each encoder actually begins encoding the lower or higher resolution content, as is taught by Jain (see

e.g. column 5, line 64 – column 6, line 28). Since Sullivan teaches including frame numbers with such timecodes, this combination of Loveman, Sullivan, Clarin, and Jain is considered to teach calibrating the offset between the lower resolution content and the higher resolution content by comparing the frame number and the timecode associated with a current frame of the lower resolution content with a starting frame number and a starting timecode of the lower resolution content, as is recited in claim 105.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blaine Basom whose telephone number is (571) 272-4044. The examiner can normally be reached on Monday through Friday, from 8:30 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Hong can be reached on (571) 272-4124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

btb
12/1/2007

TADESSE HAILU
PRIMARY EXAMINER